Volume 240 July 1992

## CONTENTS

Instability of bounded flows with elliptical streamlines. E. B. Gledzer and V. M. Ponomarev *page* 1

Measurements of the concentration field in nonlinear travelling-wave convection. Bernhard L. Winkler and Paul Kolodner 31

A new modelling of cavitating flows: a numerical study of unsteady cavitation on a hydrofoil section. Akihiro Kubota, Hiroharu Kato and Hajime Yamaguchi 59

Lubricated pipelining: stability of core–annular flow. Part 5. Experiments and comparison with theory. Runyuan Bai, Kangping Chen and D. D. Joseph 97

Interaction of electrostatic and fluid dynamic fields in wire–plate electrostatic precipitators. G. A. Kallio and D. E. Stock 133

On transition due to three-dimensional disturbances in plane Poiseuille flow. Barbro G. B. Klingmann 167

Transonic flows of Bethe–Zel'dovich–Thompson fluids. M. S. Cramer and G. M. Tarkenton 197

Zero-Prandtl-number convection. Olivier Thual 229

Insoluble surfactant spreading on a thin viscous film: shock evolution and film rupture. O. E. Jensen and J. B. Grotberg 259

Linear-eddy modelling of turbulent transport. Part 7. Finite-rate chemistry and multi-stream mixing. Alan R. Kerstein 289

Stratified flow past a sphere. Q. Lin, W. R. Lindberg, D. L. Boyer and H. J. S. Fernando 315

An experiment on boundary mixing. Part 2. The slope dependence at small angles. H. Salmun and O. M. Phillips 355

On the origin of wave patterns in fluidized beds. M. F. Göz 379

Dynamics of singular vortices on a beta-plane. G. M. Reznik 405

Numerical studies of natural transition in a decelerating boundary layer. Kyung-Soo Yang, Philippe R. Spalart and Joel H. Ferziger 433

Direct evaluation of aeroacoustic theory in a jet. James Bridges and Fazle Hussain 469

Impingement of an axisymmetric jet on unheated and heated flat plates. İ. Bedii Özdemir and J. H. Whitelaw 503

The wavenumbers of supercritical surface-tension-driven Bénard convection. E. L. Koschmieder and D. W. Switzer 533

Gravity–capillary solitary waves in water of infinite depth and related free-surface flows. Jean-Marc Vanden-Broeck and Frédéric Dias 549

Compressible magnetoconvection in oblique fields: linearized theory and simple nonlinear models. P. C. Matthews, N. E. Hurlburt, M. R. E. Proctor and D. P. Brownjohn 559

Second-order wave diffraction by a vertical cylinder. F. P. Chau and R. Eatock Taylor 571

Some aspects of mixing in a stratified turbulent patch. I. P. D. De Silva and H. J. S. Fernando 601

An unsteady wake-source model for flow past an oscillating circular cylinder and its implications for Morison's equation. Y. T. Chew, H. T. Low, S. C. Wong and K. T. Tan 627

Longitudinal shear-induced diffusion of spheres in a dilute suspension. A. Acrivos, G. K. Batchelor, E. J. Hinch, D. L. Koch and R. Mauri 651

Capillary rollers and bores. Michael S. Longuet-Higgins 659

Tollmien–Schlichting wave/Dean vortex interactions in curved channel flow. Bart A. Singer and Thomas A. Zang 681

Corrigenda 685

Reviews

*Flows and Reactions in Permeable Rocks, by O. M. Phillips* 687

*Plasma Loops in the Solar Corona, by R. J. Bray, L. E. Cram, C. J. Durrant and R. E. Loughhead* 690

*Debris Flow, by T. Takahashi* 692

Index to Volume 240 694

Schedule of International Conferences on Fluid Mechanics 696